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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/843,765 | 04/30/2001 | Akihiro Sanda | Q63763 | 9192 |
| 7590 03/20/2008 SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213 | | | | |
| EXAMINER | | | | |
| PRONE, JASON D | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 3724 | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/843,765

Applicant(s)

SANDA ET AL.

Examiner

Jason Prone

Art Unit

3724

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 7, 16, 17, 19, 20 and 24-26 is/are allowed.
- 6) ☒ Claim(s) 6, 18, 21-23 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/30/01, 10/8/03, & 12/9/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6, 18, and 27 are rejected, as best understood, under 35 U.S.C. 103(a) as being unpatentable over Potsch et al. (3,788,180) in view of Wakayama (5,836,229). Potsch et al. discloses the invention including a drum-shaped rotary blade (53), a disk shaped rotary blade (68), that the rotary blade has a cutting edge (Fig. 9), a first beveled surface facing the drum-shaped rotary blade and progressively spaced from the drum-shaped rotary blade toward the cutting edge (68'), a second beveled surface facing the work piece and progressively spaced from the cutting edge away from the work piece (200), a plurality of disk-shaped rotary blades (68), and wherein the disk-shaped rotary blade is one of a plurality of a disk-shaped rotary blades (Fig. 2).

However, Potsch et al. fail to disclose that the disk-shaped rotary blade has irregularities continuously disposed along the entire circumference of the blade, the irregularities have an irregularity quantity set to a value which ranges from 0.5µm to 5µm, the irregularities have one of saw-tooth shaped and undulating shape, the irregularity quantity is substantially along a radial direction of the disk-shaped rotary blade perpendicular to the rotational axis, the irregularity quantity being a distance from

a bottom to a top of one of the irregularities, and the irregularities include plural periodicity.

Wakayama et al. teach it is old and well known in the art of disc blades to incorporate irregularities continuously disposed along the entire circumference of the blade (Column 1 lines 30-40). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided Potsch et al. with the irregularities, as taught by Wakayama et al., to prevent blade slippage and because all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective function and the combination would have yielded predictable results.

However, Potsch et al. in view of Wakayama et al. fail to disclose the specifics with regards to the irregularities. The examiner takes Official notice that it would have been obvious to try/experiment with the different shapes/sizes to determine which type of irregularities work best with specific work pieces. It is noted that there are a limited number of choices available to a person of ordinary skill in the art with regards to the size of the irregularity quantity, the shape, and the periodicity on a rotary blade. Therefore, it would have been an obvious matter of design choice to modify the device of Potsch et al. in view of Wakayama et al. to obtain the invention as specified in claims 6 and 18. The claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within technical grasp. If this leads to the anticipated success, it is likely the product is not of innovation but of ordinary skill and common sense.

3. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch et al. in view of Wakayama et al. as applied to claim 6 above, and further in view of Wingen (4,275,631). Potsch et al. in view of Wakayama et al. disclose the invention but fail to disclose the drum-shaped rotary blade comprises a plurality of grooves, each of the plurality of disk-shaped rotary blades corresponding to one of the plurality of grooves, and wherein the plurality of grooves are disposed on a surface of the drum-shaped rotary blade.

Wingen teaches that it is old and well known in the art of splitter blades the drum-shaped rotary blade comprises a plurality of grooves (14), each of the plurality of disk-shaped rotary blades corresponding to one of the plurality of grooves (Fig. 3), and wherein the plurality of grooves are disposed on a surface of the drum-shaped rotary blade (Fig. 3). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided Potsch et al. in view of Wakayama et al. with the blade structure, as taught by Wingen, because all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective function and the combination would have yielded predictable results.

Response to Arguments

4. Applicant's arguments with respect to claims 6, 18, and 21-23 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

5. Claims 1-5, 7, 15-17, 19, 20, and 24-26 are allowed.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Prone whose telephone number is (571) 272-4513. The examiner can normally be reached on 8:00-5:30, Mon - (every other) Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer D. Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

13 March 2008

/Jason Prone/

Primary Examiner, Art Unit 3724